

Motorola[®] HOME Radio

SERVICE MANUAL

MODELS
5H11
5H12
5H13

CHASSIS
HS-256

GENERAL INFORMATION

TYPE - AC-DC table model superheterodyne receiver with loop antenna.

RECEIVER MODELS -

Model	Color
5H11	Walnut
5H12	Ivory
5H13	Green

TUNING RANGE - 535 to 1620 Kc IF - 455 Kc

TUBE COMPLEMENT - 12BE6 - Converter
12BA6 - IF Amplifier
12AT6 - Det, AVC & 1st AF Amp
50C5 - Power Amplifier
35W4 - Rectifier

POWER SUPPLY - 117 volts AC or DC, 35 watts



INSTALLATION & OPERATING INSTRUCTIONS

VOLUME CONTROL & OFF-ON SWITCH. The "off-on" switch and volume control are combined and are operated with the left-hand knob. NOTE: If the receiver does not operate from DC power, reverse the plug in the power outlet. When operating from AC power, reception may sometimes be improved by reversing the power plug in the outlet.

TUNING CONTROL. Stations are tuned in with the right-

hand knob.

ANTENNA. A built-in loop antenna eliminates the need for an outside antenna in most locations. When receiving a weak station, rotate the receiver slightly for best signal strength. If additional pick-up is necessary, connect an external antenna to the radio by following the instructions printed on the rear panel. CAUTION: Never connect the radio chassis to a water pipe, radiator, or other ground.

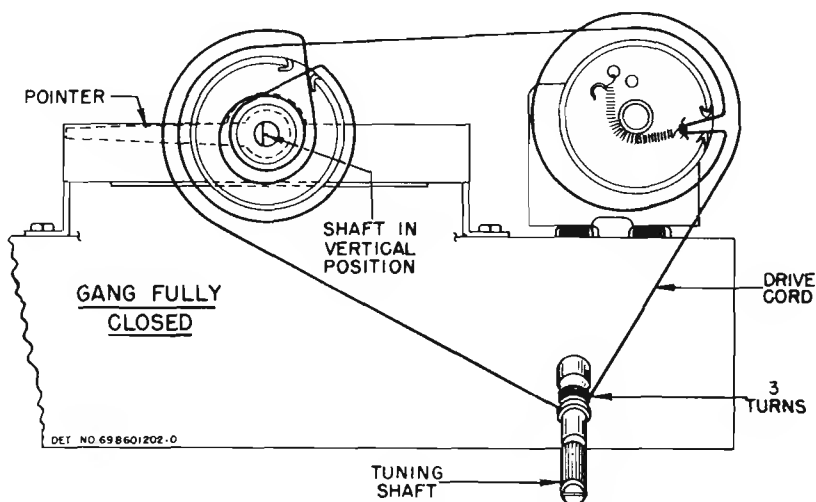


FIGURE 1. STRING DRIVE DETAIL

4545 AUGUSTA BOULEVARD

Motorola Inc.

CHICAGO 51, ILLINOIS

SERVICE NOTES

The chassis of this receiver is connected directly to the power line. When operating the chassis (from an AC line) outside of its cabinet, use an isolation transformer between the power line and the receiver to reduce the possibility of an electrical shock.

TO REMOVE THE CHASSIS FROM THE CABINET:

1. Pull off the two radio control knobs.
2. Pull off the brass cover over the pointer.

3. Pull off the pointer.

4. Remove the split plugs which hold the loop to the cabinet.

5. From the back of the cabinet, remove the two hex head screws at the rear edge of the radio chassis.

6. Slide the radio chassis and loop from the cabinet.

ALIGNMENT

NOTE: If AC power is used, it is recommended that an isolation transformer be placed between the power line and the receiver to avoid hum and electrical shocks. If an isolation transformer is not available, connect the low side of the signal generator to chassis through a .1 mf capacitor.

1. Connect a low range output meter across the speaker voice coil.
2. Connect the low side of the signal generator to chassis.
3. Set the signal generator for 400 cycle, 30% modulation.

4. Turn the receiver volume control to maximum.

5. Use a small fibre screwdriver for aligning the IF and diode transformers.

6. As stages are brought into alignment, reduce the signal generator output to a level which produces less than .40 volts (.05 watt) across the voice coil to avoid overloading the receiver.

7. See Figure 2 for adjustment locations and the following chart for procedure.

ALIGNMENT CHART

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT 1.	.1 mf	Grid of conv. (pin 7, 12BE6)	455 Kc	Fully open	1, 2, 3, & 4 (IF cores)	Adjust for maximum.
RF ALIGNMENT 2.	-	Grid of conv. (pin 7, 12BE6)	1620 Kc	Fully open	5 (Osc)	Adjust for maximum.
3.	-	Radiation loop*	1400 Kc	Tune for max	6 (Ant)	Adjust for maximum.

*Connect generator output across 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

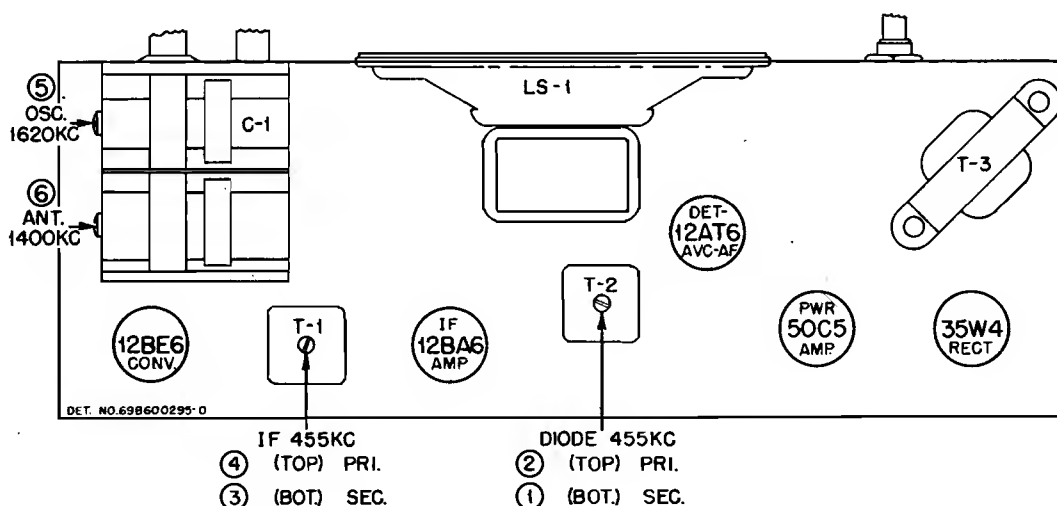


FIGURE 2. TUBE & TRIMMER LOCATIONS

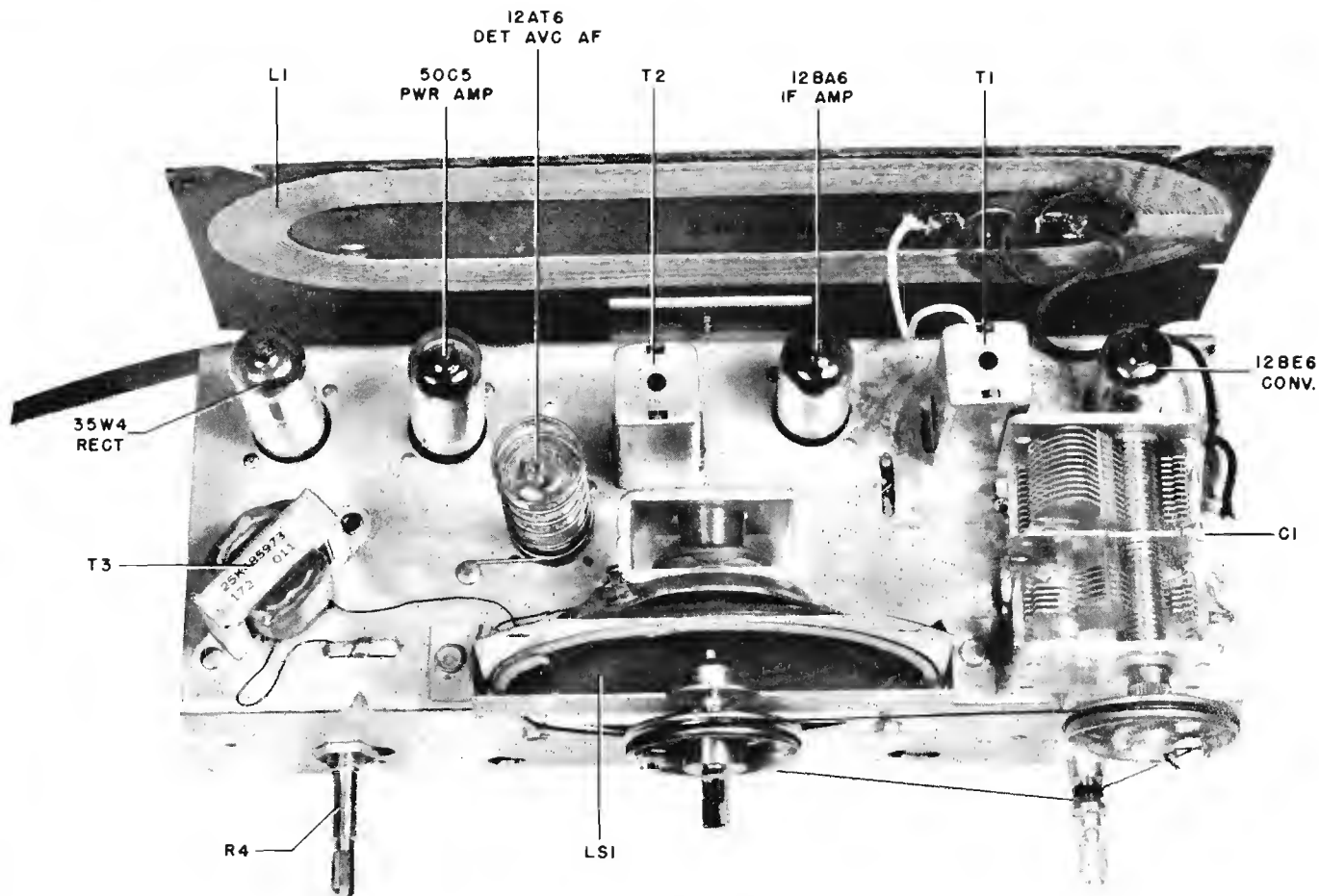


FIGURE 3. TOP VIEW OF CHASSIS

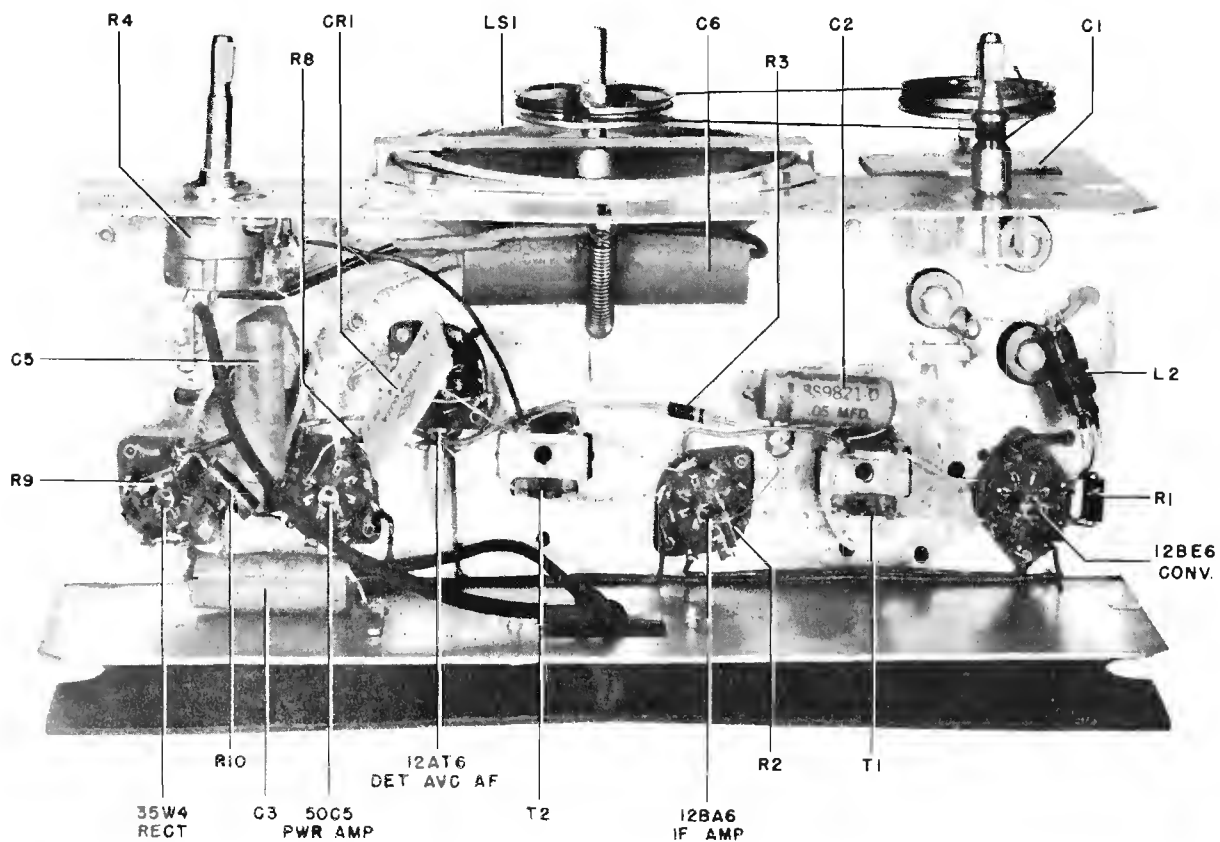
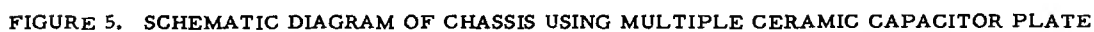


FIGURE 4. BOTTOM VIEW OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR-RESISTOR PLATE



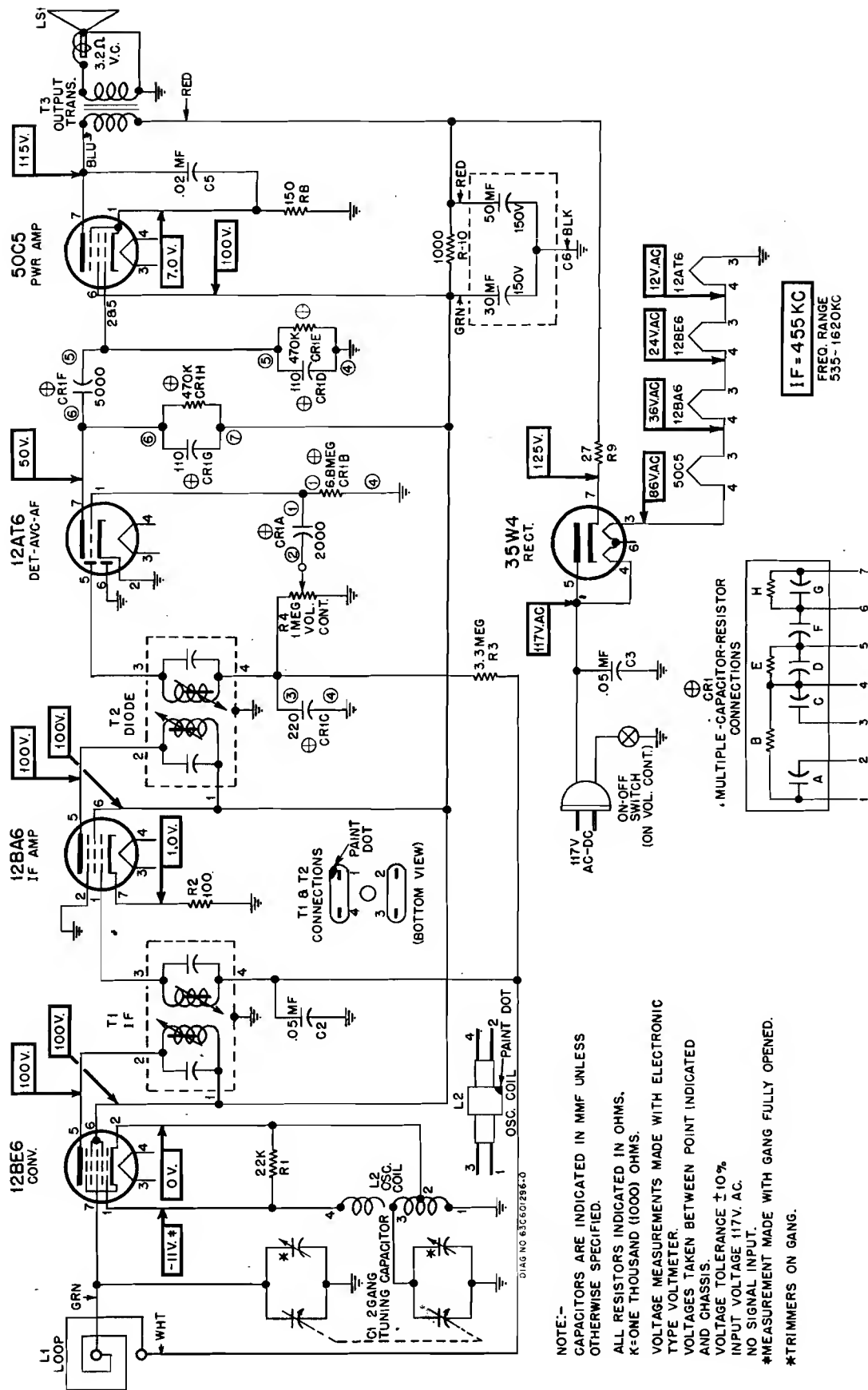


FIGURE 6. SCHEMATIC DIAGRAM OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR-RESISTOR PLATE

REPLACEMENT PARTS LIST

NOTE: When ordering parts specify model number of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Ref. No.	Description	List Price
CHASSIS PARTS - ELECTRICAL				42A485548	Clip, IF coil mtg.....doz	.20
<u>Capacitors</u>				11M8944	Cord, dial: 18 lb; black.....yd	.10
C-1	19B600483	Variable: 2 gang; with pulley.....	2.30	30A470651	Cord, line: with plug; 6 ft long..	.75
C-2	8R9821	Paper: .05 mf 200V.....	.20	5A19658	Eyelet, spacer (gang mtg).....doz	.20
C-3	8R9816	Paper: .05 mf 400V.....	.20	5A70404	Grommet, rubber (gang mtg).....doz	.60
C-4	21B482847	Ceramic, multiple: 2000,220 220, 5000 mmf.....	.65	14A482844	Insulator, line cord: fibre.....doz	.25
C-5	8R9802	Paper: .02 mf 400V....	.20	29R3010	Lug, soldering (under gang mtg screw).....doz	.30
C-6	23B600855	Electrolytic: 50-30 mf/150V	1.10	2S7051	Nut, hex palnut: 3/8-32 x 9/16 (volume control mtg).....doz	.15
<u>Capacitor-Resistor</u>				1X600590	Pulley and Bushing Assembly, pointer drive.....	.25
CR-1	21B601007	Capacitor-resistor: 2000, 220,110,110,5000 mmf; 6.8 meg; 470,000, 470,000 ohms	.85	5S7771	Rivet: .088 x 3/16 stl; nkl pl (tube socket mtg).....per/c	.50
<u>Coils</u>				5S7707	Rivet: .122 x 5/32 stl; nkl pl (tube shield, output transformer, and tuning shaft bracket mtg).... per/c	.50
L-1	24C600518	Loop Antenna Assembly: includes back panel.....	1.00*	3S2294	Screw, machine: 6-32 x 1/2 plain hex head lock screw; cad pl (gang mtg).....doz	.15
L-2	24K600896	Oscillator coil(green dot).	.65	3S7477	Screw, machine: 3-32 x 1/4; type #1; plain hex head; cad pl (back panel mtg).....doz	.15
<u>Speaker</u>				3S2695	Screw, sheet metal: #6 x 3/16 PKZ plain hex head; cad pl (pointer bracket mtg).....per/c	.50
LS-1	50C691401	Speaker: 4" PM; 3.2 ohm VC. exch	2.50* 1.90	3S3398	Screw, sheet metal: #6 x 3/8 PKZ plain hex head; cad pl (loop bracket mtg).....per/c	.50
<u>Resistors</u>				3S7454	Screw, sheet metal: #8 x 1/4 PKZ plain hex head; cad pl (speaker mtg).....per/c	.50
Note: All resistors are insulated carbon type unless other specified.				3S7148	Setscrew: 6-32 x 1/8; Allen head; cad pl (pointer drive pulley mtg)	.10
R-1	6R6028	22,000 20% 1/2W.....doz	1.20	47K600598	Shaft, pointer.....	.10
R-2	6R6018	100 20% 1/2W.....doz	1.20	1K600594	Shaft, tuning.....	.20
R-3	6R2118	3.3 meg 20% 1/2W.....doz	1.20	26A481521	Shield, spring (for 12BA6 tube)doz	.50
R-4	18K600473	Volume control: 1 meg; includes on-off switch.....	1.00	9A472534	Socket, tube: miniature; 7-prong..	.15
R-5	6R2109	10 meg 20% 1/2W.....doz	1.20	41A73996	Spring, tension(electrolytic mtg).	.05
R-6	6R6032	470,000 20% 1/2W.....doz	1.20	41A14244	Spring, tension (pointer drive cord).....doz	.55
R-7	6R6032	470,000 20% 1/2W.....doz	1.20	4K692188	Washer, "C" (tuning shaft and pointer shaft mtg).....doz	.20
R-8	6R3992	150 20% 1/2W.....doz	1.20	4S7633	Washer, flat: 9/16 x 11/64 x .033 stl; cad pl (back panel mtg)..doz	.15
R-9	6R5683	27 10% 1/2W.....doz	1.20	4K482859	Washer, shoulder: fibre (loop bracket mtg).....doz	.15
R-10	6R3953	1000 20% 1W.....each	.20	CABINET PARTS		
<u>Transformers</u>				16E600461	Cabinet, table model: walnut(5H11)	4.95*
T-1,2	24B485553	IF and Diode transformer (green dot): 455 Kc; complete with capacitors, cores, and shield.....	.95	16K600463	Cabinet, table model: ivory (5H12)	5.80*
T-3	25K485973	Output transformer.....	.65	16K600465	Cabinet, table model: green (5H13)	5.80*
Ref. No.	<u>Description</u>		<u>List Price</u>	15B600569	Cover, pointer.....	.65
CHASSIS PARTS - MECHANICAL				36B600566	Knob, control: walnut (5H11).....	.25
7K485971	Bracket, loop mtg.....		.05	36K600567	Knob, control: ivory (5H12).....	.25
7A600476	Bracket, tuning shaft mtg.....		.10	36K600568	Knob, control: green (5H13).....	.25
1X600606	Bracket, pointer shaft mtg: with bushing.....		.30	38A25507	Plug, split (back panel mtg)....doz	.15
				52B600537	Pointer, dial.....	.20
				3S3371	Screw, sheet metal: #8 x 3/8 PKF plain hex head; cad pl (chassis mtg).....per/c	.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

*Plus Federal Excise Tax At Current Rate

